

NON-PUBLIC?: N  
ACCESSION #: 8911090270  
LICENSEE EVENT REPORT (LER)

FACILITY NAME: VOGTLE ELECTRIC GENERATING PLANT - UNIT 2 PAGE: 1  
OF 3

DOCKET NUMBER: 05000425

TITLE: REACTOR TRIP ON HIGH FLUX RATE DUE TO ROD DROP  
EVENT DATE: 10/11/89 LER #: 89-027-00 REPORT DATE: 11/03/89

OTHER FACILITIES INVOLVED: DOCKET NO: 05000

OPERATING MODE: 1 POWER LEVEL: 058

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR  
SECTION:  
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:  
NAME: R. M. ODOM, NUCLEAR SAFETY AND COMPLIANCE

TELEPHONE: 404-826-3201

COMPONENT FAILURE DESCRIPTION:  
CAUSE: X SYSTEM: AA COMPONENT: IC MANUFACTURER: W120  
REPORTABLE NPRDS: N

SUPPLEMENTAL REPORT EXPECTED: NO

#### ABSTRACT:

On 10-11-89, at 2333 CDT, an automatic reactor trip occurred with the reactor in stable operation at 58% of rated thermal power. All automatic safety features functioned as required and the reactor was stabilized in Mode 3 without incident.

No annunciator or other warning of a problem preceded the reactor trip. Following a review of computer printouts of data associated with the trip, the first out annunciator was identified as a high flux rate trip annunciator. Operability testing of the control rods then indicated that a problem existed with rod K-2 in control bank B. Investigation of the control rod circuitry identified a failed diode which had apparently resulted in a loss of current to the stationary gripper coil. This allowed the rod to drop into the core and initiate a negative flux rate

trip.

Corrective action included replacing the diode for rod K-2.

END OF ABSTRACT

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#### A. REQUIREMENT FOR REPORT

This report is required per 10 CFR 50.73 (a)(2)(iv) since the event resulted in an automatic actuation of the Reactor Protection System (RPS).

#### B. UNIT STATUS AT TIME OF EVENT

At the time of the event, Unit 2 was in Mode 1 (Power Operation) at 58% of rated thermal power. The unit was being returned to full power following completion of a 4 day snubber inspection and maintenance outage.

#### C. DESCRIPTION OF EVENT

On 10-11-89, at 2333 CDT, an automatic reactor trip occurred with the reactor in stable operation at 58% of rated thermal power. No annunciator or other warning of a problem was received prior to the reactor trip. When the trip occurred, a "Turbine Trip/P9 Reactor Trip" and a "NIS High Flux Rate Power Range Reactor Trip" annunciator were received simultaneously in the control room. A Feedwater Isolation (FWI) occurred as expected following the reactor trip and Auxiliary Feedwater (AFW) actuation occurred on steam generator low-low level as expected. At 2352 CDT, the reactor was stabilized in Mode 3 (Hot Standby) and unit operating Procedure 12006-C "Unit Cooldown to Cold Shutdown" was entered.

#### D. CAUSE OF EVENT

Review of the data associated with the reactor trip indicated that the first out annunciator had been a High Flux Rate Trip annunciator. The negative flux rate trip bistables were found tripped at the nuclear instrumentation system (NIS) cabinets. This indicated that a dropped rod was the likely cause of the reactor trip. To investigate this possibility, testing was performed per Procedure 14410-2, "Control Rod Operability Test," to determine the operability of the control rod banks. This testing revealed that rod K-2 in control bank "B" would not withdraw. Investigation of

the control circuitry for rod K-2 found that a diode in the control rod drive power supply had failed. The failure of the diode had apparently resulted in a loss of current to the stationary gripper coil for rod K-2 allowing this rod to fall into the reactor. Discussions were held with Westinghouse and it was confirmed that a drop of rod K-2, due to its location in the core, would give a reactor trip on negative flux rate (2 out of 4 coincidence required). The failure of the diode is the root cause for the reactor trip.

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#### E. ANALYSIS OF EVENT

Following the reactor trip, all control rods were observed to fully insert into the core. All automatic engineered safety features functioned as required following the reactor trip and the reactor was stabilized in Mode 3 without incident. Based on these considerations, there was no adverse affect on plant safety or on the health and safety of the public.

#### F. CORRECTIVE ACTIONS

Diode CR4 for control rod K-2 was replaced and rod K-2 was verified to be operable.

#### G. ADDITIONAL INFORMATION

##### 1. Failed Components Identification

Diode - Westinghouse Electric Part No. 1N1206AR

##### 2. Previous Similar Events

None

##### 3. Energy Industry Identification System Codes

Control Rod Drive System (PWR) - AA

Plant Protection System - JC

Incore/Excore Monitoring System - IG

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W.G. Hairston, III  
Senior Vice President November 3, 1989  
Nuclear Operations

ELV-01029  
0088

Docket No. 50-425

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D. C. 20555

Gentlemen:

VOGTLE ELECTRIC GENERATING PLANT  
LICENSEE EVENT REPORT REACTOR  
TRIP ON HIGH FLUX RATE DUE TO ROD DROP

In accordance with 10 CFR 50.73, Georgia Power Company hereby submits the enclosed report related to an event which occurred on October 11, 1989.

Sincerely,

W.G. Hairston, III

WGH,III/NJS/gm

Enclosure: LER 50-425/1989-027

xc: Georgia Power Company  
Mr. C.K. McCoy  
Mr. G. Bockhold, Jr.  
Mr. P.D. Rushton

Mr. R.M. Odom

U.S. Nuclear Regulatory Commission

Mr. S.D. Ebnetter, Regional Administrator

Mr. J.B. Hopkins, Licensing Project Manager, NRR

Mr. J.F. Rogge, Senior Resident Inspector, Vogtle

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